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ABSTRACT

There is a present concern that the majority of children in the United States will be exposed to drug and alcohol use before they leave elementary school. It is further known that the ability of children and teenagers to avoid indiscriminate use and abuse of drugs appears to be related to a number of social, economic, physiological, and psychological factors. The purpose of this research-based design was to address drug prevention and health promotion strategies through the combination of parent education and involvement and positive peer influence. These strategies were implemented in Project KICK using a four-cornered partnership among Florida State University, an elementary school, a middle school, and a community advisory board. The expected outcomes for the research project were improved self-esteem, drug knowledge and awareness, improved parenting skills, and health promotion. Both bimonthly parent education courses and weekly peer role modeling sessions between middle and elementary school students comprised the intervention for this research. It was hypothesized that the intervention would lead to an increase among the third graders (N=34) in self-esteem, improved attitudes, increased knowledge regarding drugs, and an improvement in the quality of parent-child relationships. The results were encouraging. Increases were found in the predicted direction from the experimental group on all of the major variables. (Author/ABL)

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A SCHOOL-BASED DRUG EDUCATION HEALTH PROMOTION RESEARCH PROJECT

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Abstract

The purpose of this research-based design was to address drug prevention and health promotion strategies through the combination of (1) parent education and involvement and (2) positive peer influence. These strategies were implemented using a four-cornered partnership among Florida State University, an elementary school, a middle school, and a community advisory board.

The expected outcomes for the research project were improved self-esteem, drug knowledge and awareness, improved parenting skills, and health promotion. Both bimonthly parent education courses and weekly peer role modeling sessions between middle and elementary school students comprised the intervention for this research.

It was hypothesized that the intervention would lead to an increase among the third graders in self-esteem, improved attitudes, increased knowledge regarding drugs, and an improvement in the qualify of parent-child relationships. The results were encouraging. Increases were found in the predicted direction from the experimental group on all of the major variables.

Statement of the Problem

There is a present concern that the majority of children in the United States will be exposed to drug and alcohol use before they leave elementary school (Burke, 1986). It is further known that the ability of children and teenagers to avoid indiscriminate use and abuse of drugs appears to be related to a number of social, economic, physiological, and psychological factors (Kozicki, 1986). These drug problems are particularly evident in the state of Florida, which was the site of 90% of the nation's cocaine seizures in 1988 and where approximately one-third of Florida's school children are economically disadvantaged (Florida Education Policy Brief, November, 1989).

Project KICK was proposed as a direct response to a school-based drug education health promotion research initiative which focused upon the development and testing of an effective drug prevention program for elementary-age children. The integrated and synergistic model of Project KICK specifies a three-cornered partnership among the schools, university, and community. The main intervention was to combine parent education and training with positive peer counseling.

The specific purpose of Project KICK was to test a number of assumptions and models about alcohol and drug abuse prevention related to early intervention and health promotion which involved community partnership, drug education, parent involvement, and peer counseling. The emphasis of Project KICK was to enhance drug

refusal skills in elementary school children through an approach that emphasized the partnership stated above (schools, university, and community).

The elementary and middle schools provided the venue for the research activity. At the schools, cooperating teachers, counselors, and the two student groups (the middle school buddies and the elementary school children) participated in the study. The community participated in two ways: (a) through parent training and (b) through the creation of a Community Advisory Board. The Community Advisory Board membership was drawn from stakeholder groups with representatives from the police department and social service agencies. Also parents, teachers, community leaders, and students were included. The university provided the research base and the technical skills to conduct the training, research, and coordination/management of the model. The research was conducted at one elementary school and one middle school which share a common campus in a medium-sized southern city.

The major goals of this project addressed drug prevention strategies through the use of two specific models: 1) parent education and involvement, and 2) positive peer ("buddy") influences. More specific objectives addressed increased self-esteem for students, improved attitudes for students, improved knowledge regarding drugs, and improvement in the quality of parent/child relationships.

Literature Review

According to the literature, the factors which contribute to adolescent drug use vary widely and include attempts to cope with personality conflicts, rebellion against authority and expression of individuality, and parental influence (Kozicki, 1986). Thus, cooperation among parents, teachers, and children has been identified as a significant component of early intervention programs. I.J. Gordon (personal communication, 1977) stated that "parents are the first and foremost teachers of our children." It was his basic premise that families and parents "are the most significant forces shaping our society" (I.J. Gordon, personal communication, 1977). The need for multilevel interventions including parents, the community, and even the media is presented as an important aspect of major approaches to school-based substance abuse prevention for adolescents (Forman & Linney, 1988). DeMarsh & Kumpfer (1985) noted that most intervention and prevention programs are community and school-based and may fail to utilize the valuable resources of parents and families.

With respect to this research, several outcomes have been identified. These include (1) adolescent/pre-adolescent increased self-concept and self-esteem, (2) positive peer influence, (3) an increased knowledge base about drugs and drug awareness, and (4) an increased sense of cooperation among parents, teachers, counselors, and adolescents/pre-adolescents. The project was based upon the

needed areas drawn from research findings which have shown promise in preventing drug and alcohol abuse.

Self-Esteem

Wittenberg (1988) summarized the literature on characteristics of youths-at-risk and noted that one key factor is a student's poor self-concept. Alterman (1985), in a study of 148 third and fourth graders, found a significant change in the self-concept of the group whose teachers utilized a substance abuse prevention program. Moreover, previous process-outcome research applied to substance abuse prevention and intervention programs has been found to be deficient in certain aspects attempting to improve self-esteem and appears to warrant further evaluation as well as modification (Sullivan, Guglielmo & Levander, 1986). Miller (1988) examined the effectiveness of a program focusing on positive self-esteem development on alcohol-related attitudes with fifth graders. The findings supported the hypothesis that potential behaviors for drug use were decreased with the development of positive self-esteem (Miller, 1988).

Caviola and Schiff (1989) concurred in their study which showed that lower self-esteem has been recognized as a significant factor within chemically dependent adolescent groups. The question of whether self-image was higher or lower in substance abusers was raised by Bremer (1985). The findings from this study suggested that future research should explore ages even younger than 13 years to measure self-image as a possible predictor of substance abuse.

Attitudes toward drug use appear to be more closely connected with self-concept, peer pressure, and other attitudinal components. For example, Pisano & Rooney (1988) found that sixth graders conformed more than fourth or fifth graders to peer pressure and had more positive attitudes toward drug use. Thus, earlier intervention drug abuse education programs were recommended to help prevent this trend.

Peer Influences

One twelve-week program implemented by Knapp (1987) focused on attitudinal components, such as a greater awareness of potentialities and strengths, diminished negative feelings and building a more positive self-concept. Knapp also confirmed that young children of alcoholics are at a greater risk of substance abuse than children of non-alcoholics. Education was cited as one of the avenues for intervention.

Oster (1983) developed a peer counseling method for substance abuse prevention with high school juniors and seniors. Results indicated the students were able to learn the peer counseling skills. However, documentation of subsequent drug abuse prevention was not obtained, thus indicating need for further examination and tighter research controls.

Drug Awareness

Increased drug awareness and drug knowledge have been identified as significant factors in drug intervention programs. In the Newberg (Oregon) School District's Impact Program, one of

the primary aims was to provide awareness and disseminate information to attempt to limit substance abuse (Leatt, 1987).

In a study focusing on adults, Burke (1986) found that the age for substance abuse has been steadily dropping into the early adolescent years. Knapp (1987) concurred with this finding. Her most recent study utilized a direct awareness substance abuse education program with sixth graders that appeared to be effective in the transmittal of information (Burke, 1986). Pisano & Rooney (1988) found that drug and alcohol education prior to grade six may be useful in preventing a trend towards positive attitudes about drug use.

Durant (1986) implemented an adolescent drug home prevention research project in eight different elementary schools in Utah. Although a majority of the sampled students did not use drugs at the beginning of the program, her treatment studies "demonstrated a significant gain in knowledge of immediate, negative effects of drug use."

As the literature indicates, children younger than sixth grade may be expected to benefit from a drug prevention program. For a number of preadolescents it is the beginning of peer pressure and, for many, a time of self-doubt and low self-esteem. Consequently, this research focused upon a multi-component, (i.e., parents, teachers, counselors, community representatives, and older students as role models) drug awareness program targeted at third grade children. Coincidentally, the middle school buddies seem to have

benefitted from the intervention. This is in support of the research (Carter, 1983) which stated that helpers gain as much as or more than the recipients of services.

The intent of this study was to assess the effects of positive peer modeling and parent counseling/education (guided by a parent/teacher/community advisory board) on outcomes for children (self-concept, attitude change, knowledge of health issues and drugs, relationship with parents) and parents (knowledge of drugs, parenting skills, etc.). The positive change in these outcomes has been shown to be directly related to successful health promotion and drug prevention.

Method

Procedures

Project KICK included training sessions for both seventh graders, who served as peer models (buddies) for third graders, and for the parents of the third graders as well as interested parents of the seventh graders. The training sequence for the seventh graders included two twenty-minute sessions twice a week on a predetermined topic. The training was carried out by Project KICK staff. After training, the seventh graders were given the opportunity to serve as a "buddy" for two twenty-minute periods with their third grade counterpart. The seventh graders described in their own words to the third graders what staff had trained them to do. Topics included but were not limited to: discussion on asking for help, values, drug knowledge, talking to parents, and so forth. In all of the buddy sessions, the children were asked to discuss their values and feelings openly with their buddies.

The learning approach employed by staff was multi-dimensional in that role playing, lecture discussion, video, handouts, and small group activities were conducted. KICK staff was consistently involved in the implementation without directly influencing the peer interactions.

The parent sessions were conducted approximately once every few months during the academic year to inform the third grade parents about the ongoing third grade training activities. Parents were also exposed to skill training in a manner parallel to their

child's training. An expert in a particular topic area was employed to conduct the parent sessions. These sessions were interactive with much discussion encouraged. The parent meetings were an integral part of the training protocol for the project. Materials were developed in order to implement the project.

Setting and Sample

The site of this study was a medium-sized southern city. Students were selected for the investigation from a population of 132 third graders at a local elementary school, Kate Sullivan Elementary (KSE). Two classes were randomly selected and assigned to the experimental group and two were randomly selected and assigned to the comparison group. Included in the sample(s) were the students' parents who also received parallel intervention to that of their children. Seventh graders (one student for each two KSE children) from a middle school, Cobb Middle School (CMS), served as the positive peer models (the buddies).

The composition of the students at KSE for both the experimental and comparison groups and their CMS buddies are included in Table 1. Information pertaining to gender, age, and ethnicity is presented. There were 47%, 54%, and 22% males for the KSE-experimental, KSE-comparison, and CMS groups respectively. The percent female population for KSE-experimental was 53%, KSE-comparison was 46% and CMS was 78%. There is a larger percentage of females within the CMS/peer buddy group as compared to the KSE experimental and comparison groups. We believe the majority of CMS

females is due to the self-selection that occurred at CMS middle school. The average age at KSE was 9.5 years for the experimental and 10.0 years for the comparison group. The average age of the CMS/peer buddy was 13.7 years. Pertaining to ethnicity, the majority of the participants were caucasian. There were 80%, 83%, and 71% caucasians in the KSE-experimental, KSE-comparison, and CMS groups respectively (see Table 1).

Insert Table 1 about here

Data Collection

The KICK research study consisted of two phases. Phase 1 consisted of applying the intervention of peer modeling and parent counseling/education to two third grade classes and their parents from March through May, 1991. Phase II consisted of applying the intervention to the original third graders who had become fourth graders and to their parents (August through December, 1991). Both phases included the comparison group of children.

All outcome data were quantifiable and have been collected. The outcome data were collected on a pretest/posttest/posttest basis for the outcomes measured. The pretest was administered to both the experimental and comparison groups within one week of entering the program (March, 1991) during Phase I. The posttest was administered to the experimental and comparison groups at the end of the 1990-91 school year (May, 1991, end of Phase I).

Table 1

Demographic Information for Project KICK Participants

		Gender		Age	Ethnicity		
Group	n	Percent Male	Percent Female	Years	Percent Caucasian	Percent African American	Percent Other
KSE-Experimental	34	47	53	9.5	80	18	2
KSE-Comparison	28	54	46	10.0	83	14	3
CMS	32	22	78	13.7	71	29	0

Another posttest was administered at the end of Phase II (December, 1991) to both groups. Standardized tests, developed questionnaires, experimenter checklists, interviews, and observations comprised the mode of data collection activities.

Instrumentation

The Piers Harris Children's Self-Concept Scale (Piers, 1984) was administered to KSE and CMS children as a pretest (March, 1991--beginning Phase I) and posttest (May, 1991--end of Phase I). It was administered again as a post posttest (December, 1991--end of Phase II). The scale is a brief self-report measure designed to aid in the assessment of self-concept in children and adolescents. The Piers Harris yields a global score and six cluster scale scores: Behavior; Intellectual and School Status; Physical Appearance and Attributes; Anxiety; Popularity; and Happiness and Satisfaction. These cluster scales were developed and refined using several factor analyses. All cluster scales were scored in the direction of a positive self-concept (i.e., high score indicates a high level of self-concept within that dimension). The reliability (test to retest equals .42 to .96 with a median of .73) and validity were acceptable.

In relation to the measurement of the students' knowledge and awareness of drugs and their impact on health promotion and the improvement in life management skills; in attitude and parenting skills; two experimenter--developed tests were constructed:

(1) Drug Information and (2) Supplemental Life Management and Decision Making. The Faces III and F-COPES were used to measure family functioning and positive parent/child relationships. Additionally, a questionnaire was developed to ascertain the status of the parent/child relationship and the stakeholders' satisfaction with the program. This questionnaire was administered at the end of the study in March, 1992.

Design

A pretest/posttest/posttest static group comparison was utilized. This design is typical of designs used in school-based research because of the presence of intact classrooms. Initially, an ANOVA was performed to determine if there were initial statistical differences between the KSE experimental and comparison groups. If initial differences were evident, an analysis of covariance procedure was performed.

A MANOVA was employed (after basic assumptions were met) on the five test instruments (Piers Harris Children's Self-Concept Scale, FACES, F-COPES, and the two experimenter-developed tests) to see if there was a significant difference among the mean scores of the Pretest, Posttest 1, and Posttest 2. If the ANOVAs revealed differences, a MANCOVA was performed. The repeated measures (MANCOVA) trend analysis was employed so that the analysis would be more robust due to the reduction in the error term of this procedure. Raw scores were chosen for the analyses because it has been found that these scores are more sensitive than scale scores to detect group differences. Although raw scores were utilized for

analyzing the data, standard scores are reported in some cases for the purposes of clarity, simplicity, and ease of dissemination of information. The SPSS computational software package was utilized to conduct the analyses.

Results

An analysis of the pretest results (ANOVA) for the three of the five tests (F-COPES, Drug, and Supplemental) indicated that the elementary school students in the comparison group (KSE-C) scored higher than the elementary school students in the experimental group (KSE-E). In fact, KSE-Comparison students scored significantly higher ($p<.05$) than the KSE-Experimental students on the F-COPES and the Supplemental tests (see Table 2).

Insert Table 2 about here

An analysis of covariance procedure (to adjust for initial differences) was completed on the test data for which there were statistically significant differences on the pretest for the experimental and comparison groups. This procedure was completed in an attempt to control for differences that may have resulted from our use of intact classes. Although classes were randomly chosen, it appears that students were not randomly assigned to the classes. We felt that the analyses of covariance procedure was a conservative technique that would allow us to avoid spurious results and control for differences between classes.

MANOVAs and MANCOVAs were performed on the five standardized tests at the Pretest, Posttest 1, and Posttest 2 intervals. Significant differences in the desired direction were observed on the Drug Knowledge Test, Supplemental (life management and decision making), Piers Harris Children's Self-Concept Scale,

Table 2

Comparison of Means on Five Pretests between KSE-Experimental and KSE-Comparison Groups

	Group	
Test	KSE-E**	KSE-C***
Piers Harris	66.74	63.28
Drug Test	36.31	38.74
Supplemental Test	29.14	35.48*
FACES	66.54	62.07
F-COPES	95.37	109.15*

* significant at $p<.05$

** N = 35

*** N = 27

and on Question 18 (physical activity) of the F-COPES. In Figures 1 through 5 are depicted the significant differences that occurred.

Insert Figures 1,2,3,4,5 about here

The initial hypothesis for all tests was that the experimental group would either perform significantly better than the comparison group or improve over time. Our analyses revealed five significant changes in the predicted direction. The following is a description of the results for each of the five analyses.

Pertaining to the Drug Knowledge Test for the KSE experimental and comparison groups, the experimental group started off lower than the comparison group and was at the same level as the comparison group on Posttest 2. Since the experimental group started off lower and then gained at Posttest 2 equal to the comparison group, we feel that progress was made (see Figure 1). This improvement was replicated for the Supplemental Test (see Figure 2). This test measures decision-making, problem solving, and values clarification skills. The experimental group started off lower than the comparison group at pretesting and performed higher than the comparison group at the Posttest 2 point. As shown in Figures 3 and 4, there was significant improvement over time (Pretest to Posttest 2) for the experimental group on the Piers Harris Children's Self-Concept Scale. In Figure 5 are the data pertaining to Question 18 (physical activity) on the F-COPES. The experimental group started off lower than the comparison group,

Figure 1. Results for the KSE-Experimental and KSE-Comparison Students on the Pretest, Posttest1, and Posttest 2.

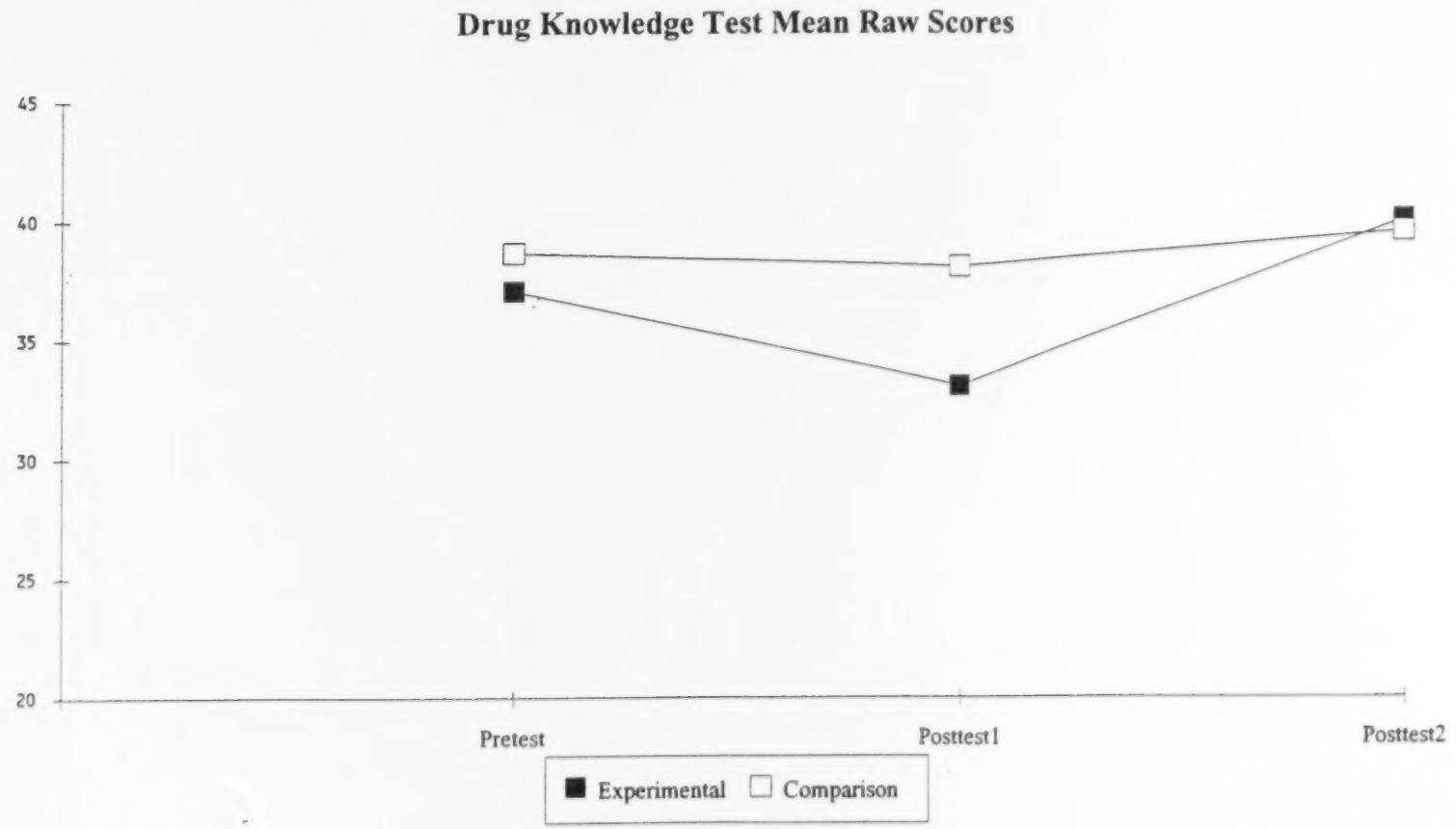


Figure 2. Results for the KSE-Experimental and KSE-Comparison Students on the Pretest, Posttest1, and Posttest 2.

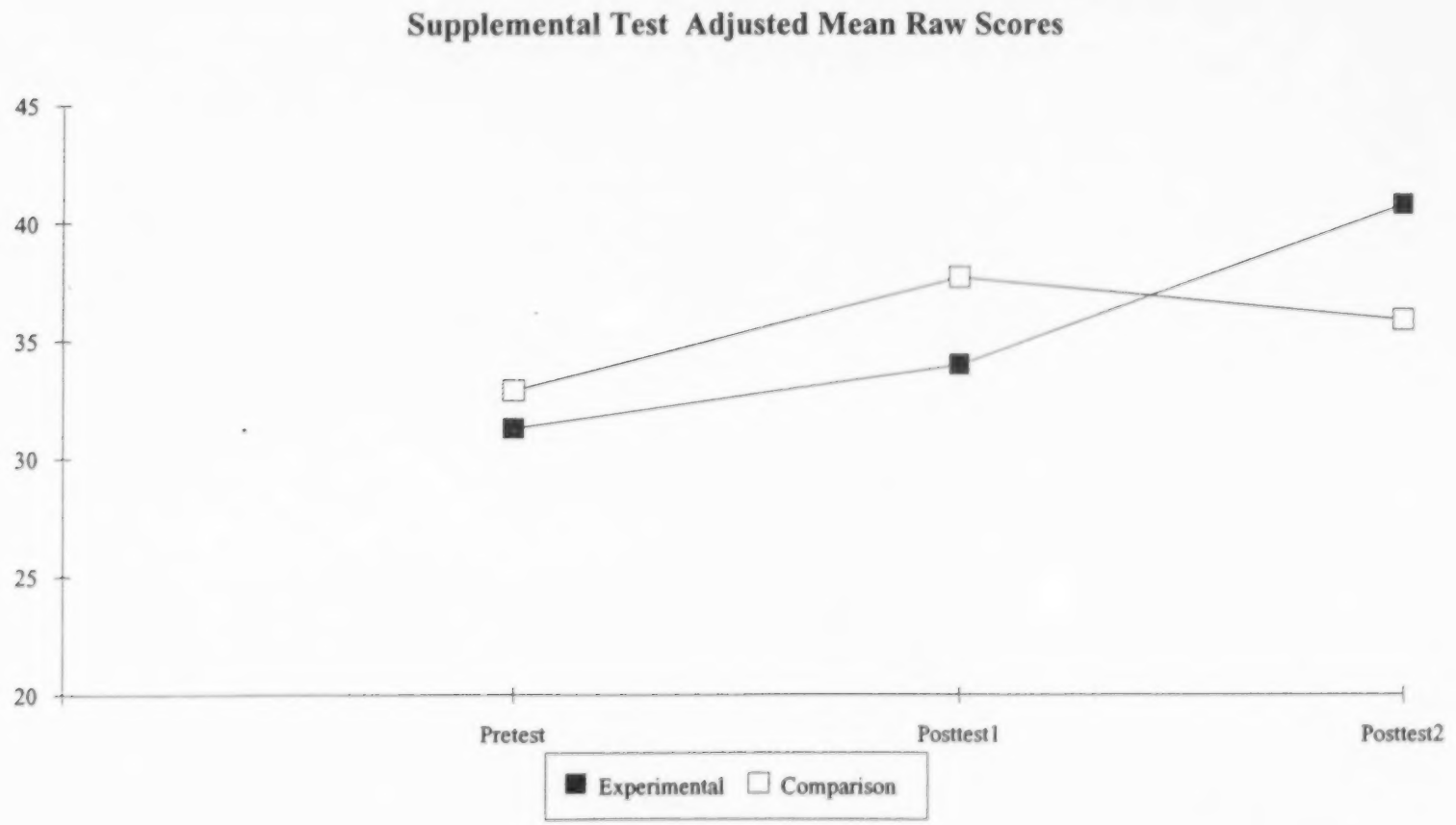


Figure 3. Results for the KSE-Experimental and KSE-Comparison Students on the Pretest, Posttest1, and Posttest 2.

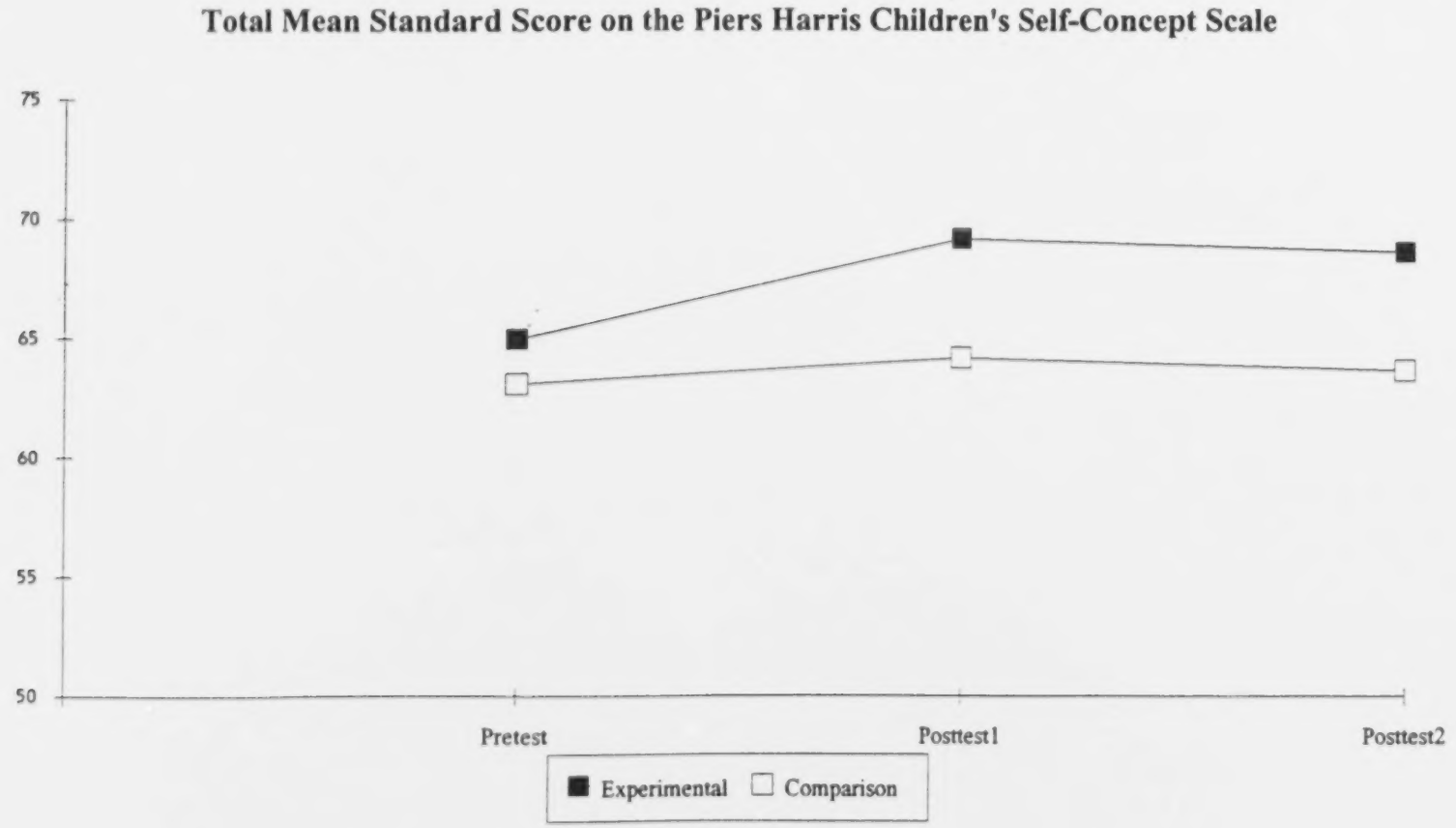


Figure 4. Results for the KSE-Experimental and KSE-Comparison Students on the Pretest, Posttest1, and Posttest 2.

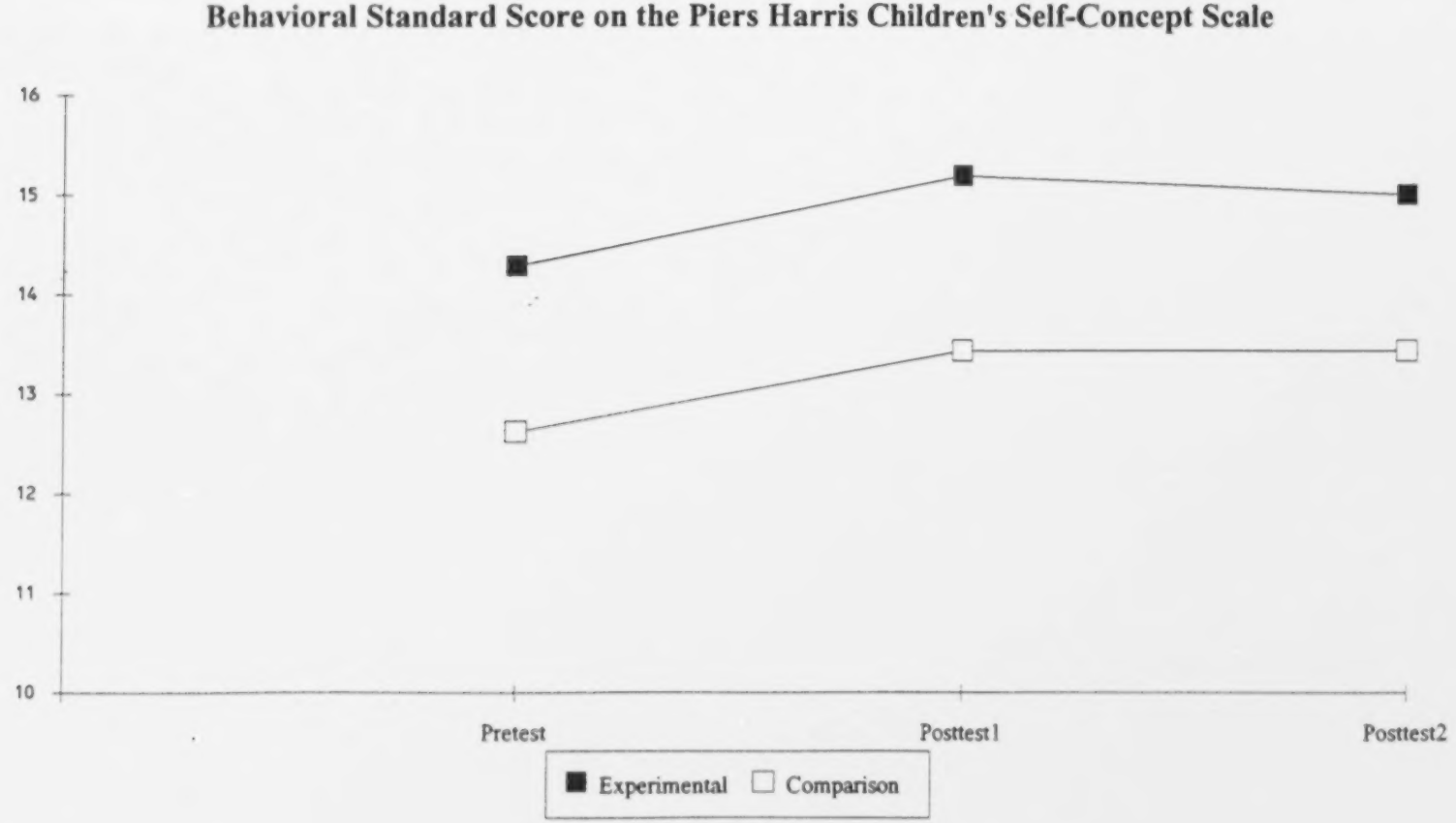
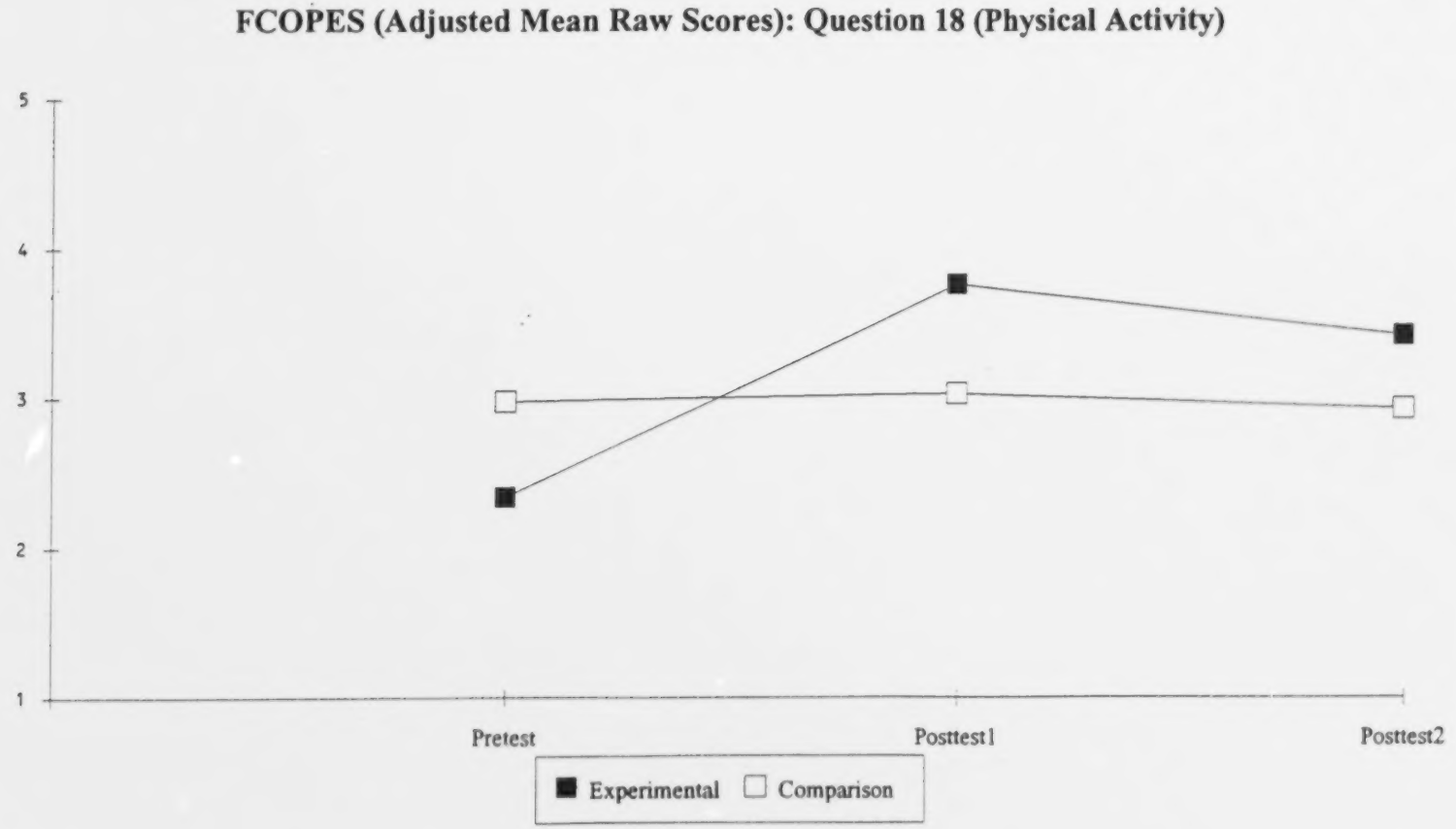


Figure 5. Results for the KSE-Experimental and KSE-Comparison Students on the Pretest, Posttest1, and Posttest 2.



made a marked gain, and maintained the gain at the Posttest 2 point.

Discussion and Conclusions

Overall, the data support the success of Project KICK in achieving its objectives. The students at KSE improved over time on five different data points of the tests that were administered. Most particularly, the KSE experimental students performed exceptionally well in the self-concept area. Qualitative data also were collected during the length of the study from all stakeholders. These data support the high level of implementation of the health promotion concepts of the program. There was a significant amount of involvement by school personnel, community representatives and parents. Also, results from surveys that were administered to the stakeholders of the program revealed a high level of satisfaction with the program.

The results of this study supported the work of Alterman, (1985); Miller, (1988); and Knapp (1987) who suggested the possibilities of drug intervention using peers as the primary independent variable would be both productive and feasible. Our study further supported the work of Gordon (personal communication) and DeMarsh and Kumpfer (1985) in the importance of involving parents as part of the drug prevention strategy.

The results are encouraging given the nature of a field-based health promotion study. The observations and anecdotal comments proffered by the principals, guidance counselors, teachers, and parents along with the enthusiasm and involvement of the students suggest that Project KICK has had a meaningful impact upon the students and their parents.

The various kinds of interventions similar to Project KICK take time to show an impact when one considers changing the nature of family relationships, changing the level of self-esteem, and increasing the level of drug-related knowledge. Therefore, longitudinal studies, as in the continuation Project SIDEKICK which has just begun, must not be considered the exception but rather the expected norm for studies of this nature. The results presented herewith show that the objectives that were initially suggested for Project KICK were achieved. The next major hypothesis to be tested investigates whether the gains made during Project KICK will be sustained through the continuation of Project SIDEKICK.

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